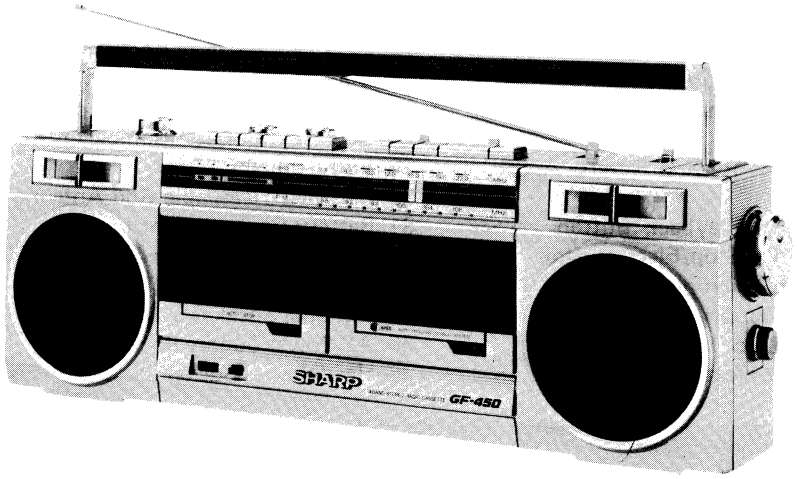
SHARP SERVICE MANUAL

ATSM982122RCS



APSS
Auto Program Search System

GF-450Z

This Service Manual omits the descriptions about the adjustment of the Radio (High Frequency) Circuit, and for their details, refer to the GF-5454Z Service Manual (ATSM182013RCS).

In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified be used.

SPECIFICATIONS

GENERAL

Power source:		AC 110 V ~ 127 V and 220 V ~ 240 V, 50/60 Hz DC 9 V (UM/SUM-1, R20, HP-2 or D type x 6)
Speakers:		10 cm (4") full range x 2
Output power:		PMPO; 15 W (7.5 W + 7.5 W) (AC operation) MPO; 12 W (6 W + 6 W) (AC operation RMS; 5.8 W (2.9 W + 2.9 W) (DC operation, 10% distortion)
Semiconductors:		9 ICs 12 transistors 26 diodes 7 LEDs
Dimensions:	Width;	532 mm (20-15/16")
	Depth;	120 mm (4-3/4")
	Height;	181 mm (7-1/8")
Weight:		4.4 kg (9.7 lbs.) without batteries

TAPE RECORDER

Tape:	Compact cassette tape
Frequency response:	50 Hz ~ 14,000 Hz
Signal/noise ratio:	55 dB (Deck 1 playback) 50 dB (Deck 2 normal tape recording)
Wow and flutter:	0.10% (WRMS)
Input impedance:	External mic; 600 ohms
Loaded impedance:	
Headphones;	8 ohms ~ 25 ohms
External speakers;	2.4 ohms ~ 8 ohms

RADIO

Frequency range:	AM; 525 kHz – 1605 kHz SW_1; 2.3 MHz – 7.3 MHz SW_2; 7.3 MHz – 22 MHz FM; 87.6 MHz – 108 MHz

Specifications for this model are subject to change without prior notice.

SHARP CORPORATION OSAKA, JAPAN

FOR A COMPLETE DESCRIPTION OF THE OPERATION OF THIS UNIT, PLEASE REFER TO THE OPERATION MANUAL.

NAMES OF PARTS

1. Volume Control
2. Balance Control
3. Tone Control
4. Function Selector Switch
5. Dubbing Switch
6. FM Mode Selector
7. Band Selector
8. Tuning Control
9. Deck 2: Pause Key
10. Deck 2: Fast-forward/Forward Key
11. Deck 2: Rewind/Reverse Key
12. Deck 2: Playback Key
13. Deck 2: Record Key
14. Deck 2: Stop/Eject Key
15. Deck 1: Pause Key
16. Deck 1: Fast-forward/Forward APSS Key
17. Deck 1: Rewind/Reverse APSS Key
18. Deck 1: Playback Button
19. Deck 1: Stop/Eject Button
20. Built-in Microphone (L-ch)
21. Power/Battery Indicator
22. FM Stereo Indicator
23. Level Indicator
24. Built-in Microphone (R-ch)
25. Deck 2: Cassette Compartment
26. Digital Tape Counter
27. Tape Counter Reset Button
28. Deck 1: Cassette Compartment
29. Fine Tuning Control
30. FM/SW2 Telescopic Rod Antenna
31. Battery Compartment Lid
32. External Microphone Sockets
33. Beat Cancel Switch
34. External Speaker Sockets
35. AC Power Supply Socket
36. Headphones Socket

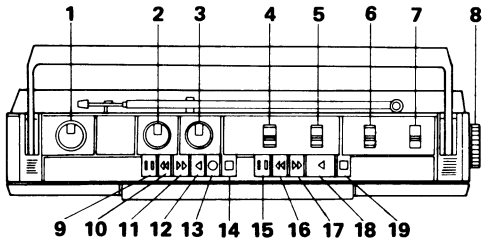


Figure 2–1

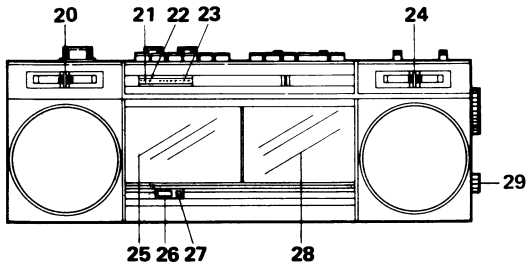


Figure 2–2

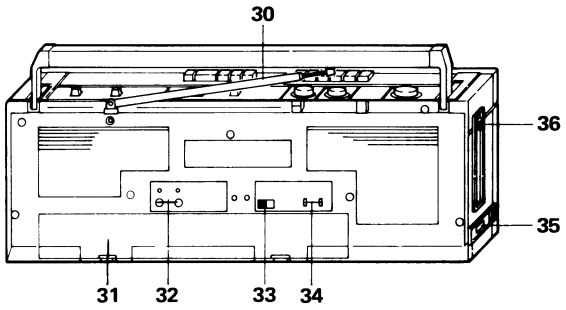


Figure 2–3

DIAL CORD STRINGING

1) Turn the drum fully clockwise and stretch the thread in the numerical order as shown in Figure 2–4.
2) Turn the tuning control shaft fully counterclockwise, and fix it with the pointer aligned with the "Marking point" on the frame. See Figure 2–5.

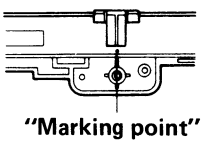


Figure 2–5

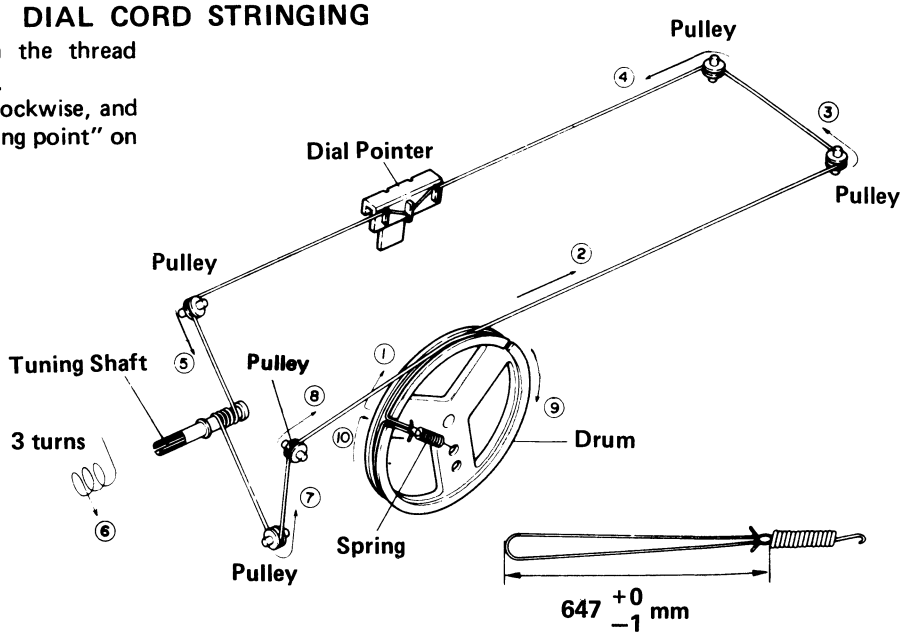


Figure 2–4

DISASSEMBLY

Caution:
Prior to the disassembly, be sure to remove the AC power supply cord, cassette tape and batteries from the unit.

[A] REMOVAL OF FRONT CABINET
(Refer to Figure 3–1, 3–2.)

1. Remove seven screws from the rear cabinet.
2. Pull out a socket of the main P.W.B. and take the front cabinet off.

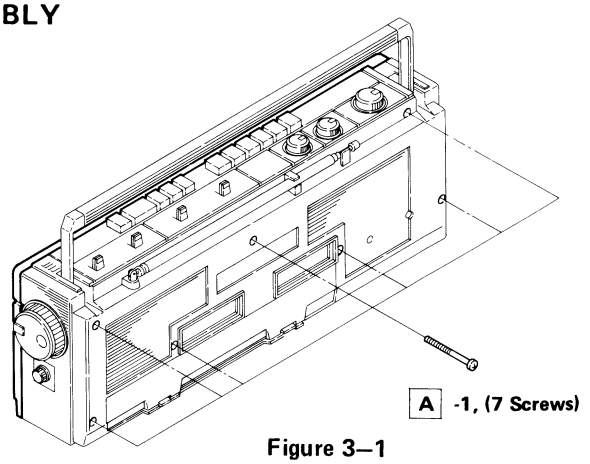


Figure 3–1

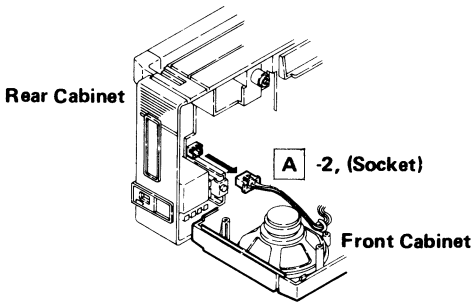


Figure 3–2

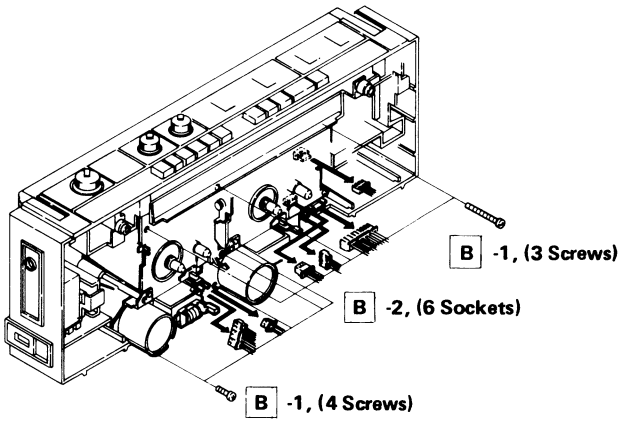


Figure 3–3

[B] REMOVAL OF MECHANISM BLOCK
(Refer to Figure 3–3.)

1. Remove seven screws from the mechanism.
2. Pull out six sockets from the main P.W.B. and the Mechanism truck connection P.W.B.

[C] REMOVAL OF FRAME AND MAIN P.W.B.
(Refer to Figure 3–4.)

1. Pull out five control knobs; tone, balance, volume, tuning and fine tuning.
2. Remove five screws from the frame and the main P.W.B.
3. Remove a socket from the main P.W.B.
   (For easier servicing, the screws may be removed from the jack P.W.B. and/or the mechanism truck connection P.W.B.)

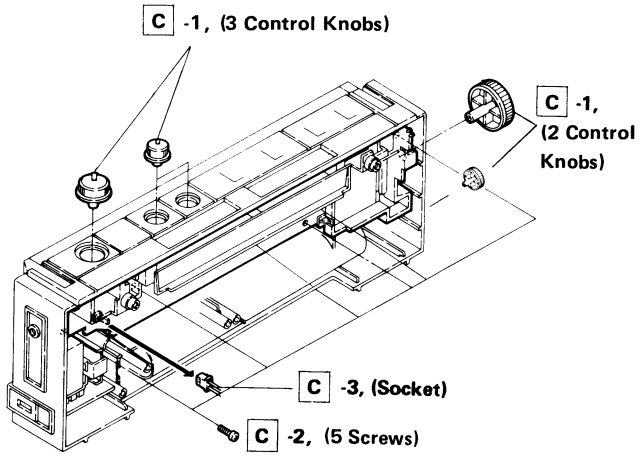


Figure 3–4

VOLTAGE SELECTION

Before operating the unit on mains, check the preset voltage. If the voltage is different from your local voltage, adjust the voltage as follows. Slide the AC power supply socket cover to the visible indication of your local voltage by loosing a screw. See Figure 3–5.

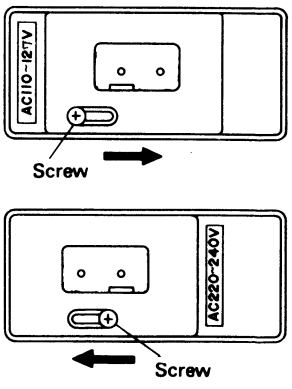


Figure 3–5

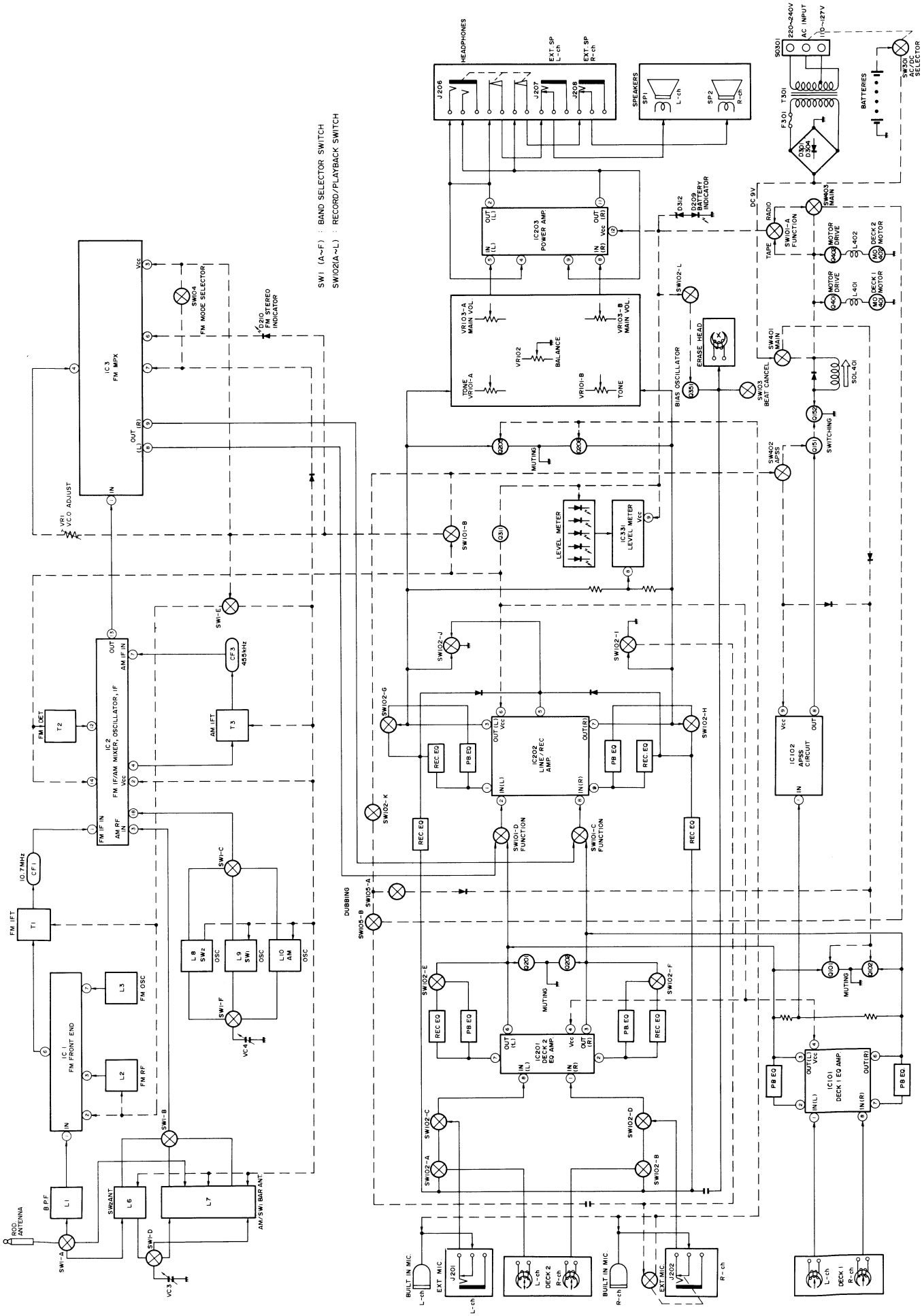


Figure 4 BLOCK DIAGRAM

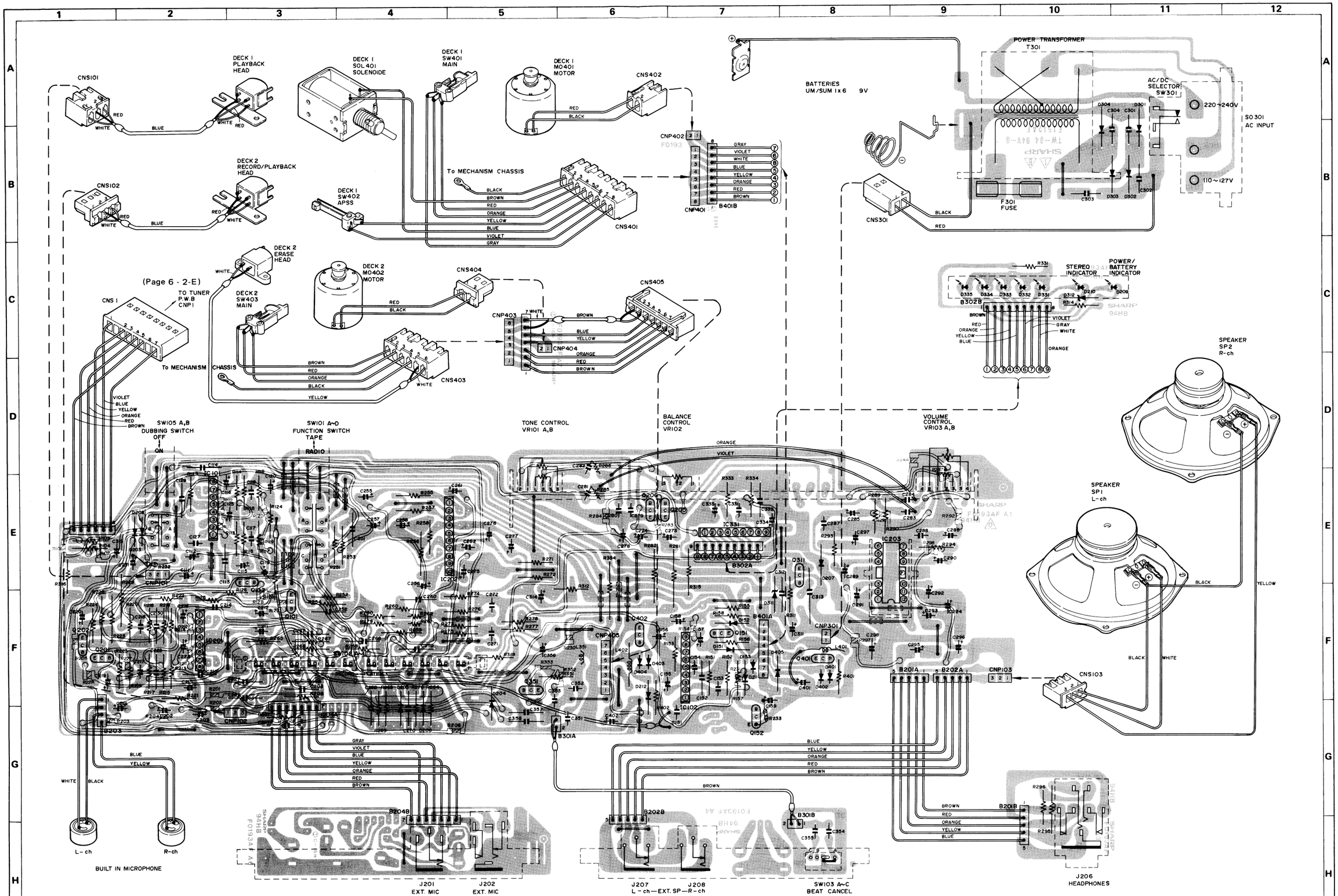


Figure 7 WIRING SIDE OF PRINTED WIRING BOARD (2/2)

MECHANICAL ADJUSTMENT

PINCH ROLLER PRESSURE CHECK

1) Place the unit in play mode.
2) Push the pinch roller, at the point Ⓐ shown in Figure 5–1, by using a tension gauge (500 gr.) so that it will come off the capstan. Then, slowly release the tension until the pinch roller hits the capstan again (i.e., the pinch roller is about to rotate again). Check, then, the tension gauge is reading 340 gr. to 440 gr.
3) If the reading is outside the range of 340 gr. to 440 gr., bend the pinch roller spring or replace.

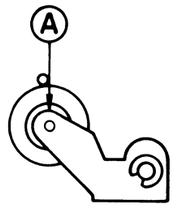


Figure 5–1

TORQUE CHECK AT PLAY, FAST FORWARD AND REWIND MODES

Put a torque meter cassette in the cassette compartment of the unit, and see that the measured torque in each mode is normal as Table 1.

Mode	Torque meter cassette	Measured torque
Playback	TW–2111	35 ~ 60 gr/cm
Fast forward	TW–2231	85 ~ 120 gr/cm
Rewind	TW–2231	85 ~ 120 gr/cm

Table 1

RECORD/PLAYBACK HEAD AZIMUTH ADJUSTMENT

1) Connect instruments as shown in Figure 5–2.
2) Set the mode selector switch at "tape" position.
3) Put a test tape (TEAC, MTT-114, 10 kHz 250 pWb/mm, −10 dB prerecorded) into the unit and play it.
4) Adjust the head azimuth adjusting screw so that the electronic voltmeter reading is maximal.

Note:
If a dual-trace oscilloscope is available, perform the adjustment so that the reading of the oscilloscope is maximal and with the least phase/output difference between channels. After the work, check that the head azimuth adjusting screw has been secured completely.

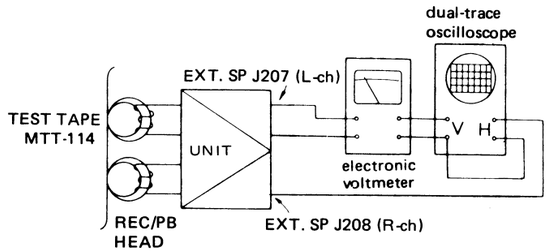


Figure 5–2

TAPE SPEED ADJUSTMENT

1) Connect instruments as shown in Figure 5–3.
2) Put a test tape (TEAC, MTT-111, 3 kHz prerecorded) into the unit and play it.
3) Adjust the semi-variable resistor in the motor so that the frequency of the deck 1 is 2965 ~ 3015 Hz and that of the deck 2 is less than the deck 1 − the difference is within 15 Hz.

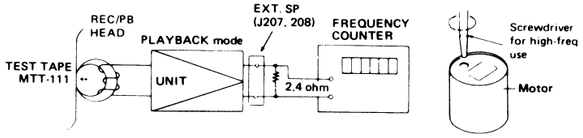


Figure 5–3

ELECTRICAL ADJUSTMENT

BIAS OSCILLATION FREQUENCY CHECK

1) Connect instruments as shown in Figure 5–4.
2) Set the function selector switch at "tape", and the beat cancel switch at "A" position.
3) Place the unit in record mode, and see that the frequency counter is reading 54 ± 3 kHz.
   Change the beat cancel switch from "A" position to "B" position, "B" position to "C" position. Then see that the frequency counter's reading is changed as shown in Table 2.

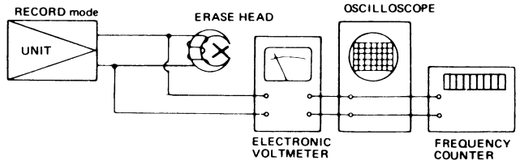


Figure 5–4

Position	A	B	C
Frequency counter's reading	54 ± 3 kHz	55 ± 3 kHz	52.5 ± 3 kHz

Table 2

PLAYBACK AMPLIFIER SENSITIVITY CHECK

1) Connect instruments as shown in Figure 5–5.
2) Set the function selector switch at "tape", the volume control knob at "max", and the tone control knob at "center" position.
3) Put a test tape (TEAC, MTT-118, 1 kHz, 250 pWb/mm, −10 dB prerecorded) into the unit and play it.
4) See that the electronic voltmeter is reading about 1.5 V.

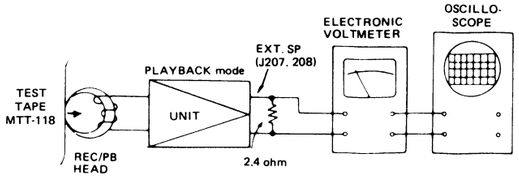


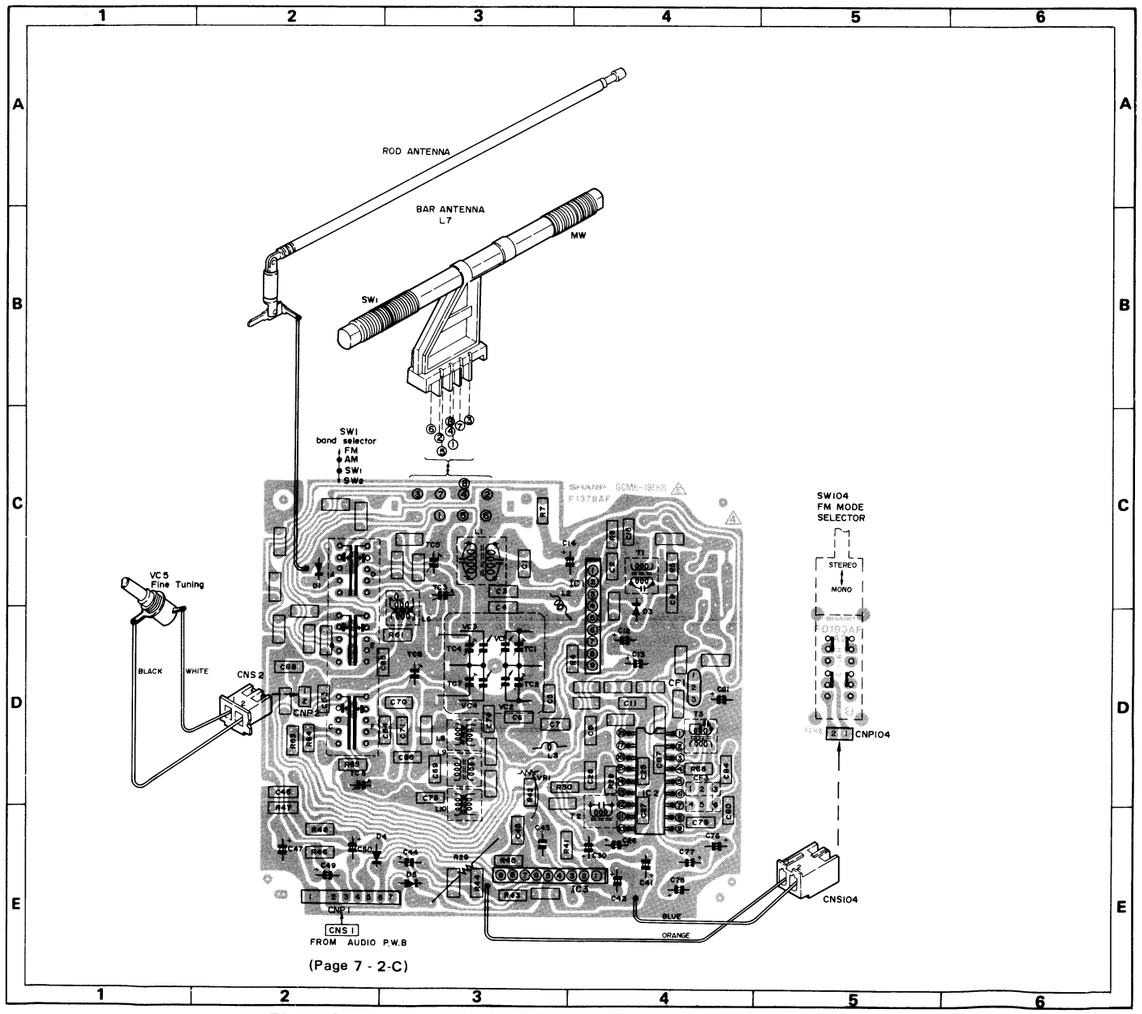
Figure 5–5

NOTES ON SCHEMATIC DIAGRAM

- Voltage readings are measured with Digital Multimeter under no signal condition in tape position.
  ( ) : AM mode
  : FM mode
- Unless otherwise specified, all resistance is shown in ohms.
  K = 1000 ohms
- Unless otherwise specified, all capacitance is shown in microfarads.
  P = Picofarads
- (CH), (RH) : Temperature compensation
- (S) : Styrol type
- (P. P.) : Polypropylene type
- ⎓ : Printed resistor

Parts marked with "⚠" (▬) are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

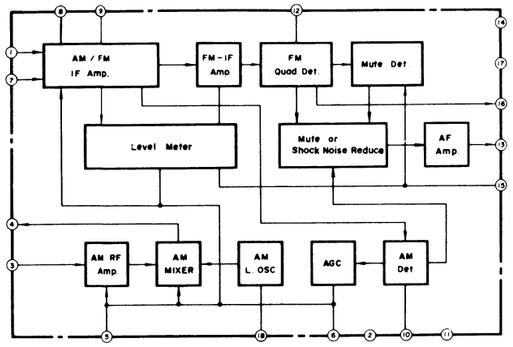
REF NO.	NAMES OF SWITCHES	POSITION
SW1, A~F	BAND SELECTOR	FM - AM - SW1 - SW2
SW101, A~D	FUNCTION SELECTOR	TAPE — RADIO
SW102, A~L	RECORD / PLAYBACK	REC. — PLAY
SW103	BEAT CANCEL	A — B — C
SW104	FM MODE SELECTOR	MONO — STEREO
SW105, A, B	DUBBING SWITCH	ON — OFF
SW401	MAIN SWITCH (DECK 1)	ON — OFF
SW402	APSS SWITCH	ON — OFF
SW403	MAIN SWITCH (DECK 2)	ON — OFF
SW301	AC/DC SELECTOR	AC — DC

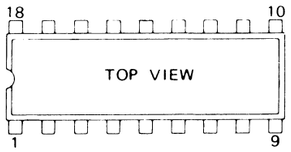


(Page 7 - 2-C)

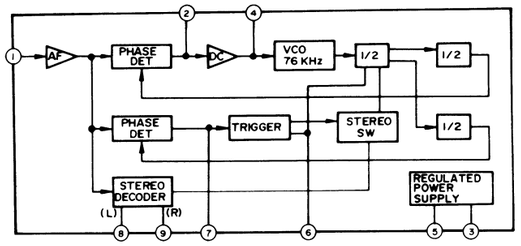
Figure 6–1 WIRING SIDE OF PRINTED WIRING BOARD (1/2)

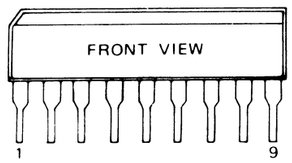
IC2: VHIAN7223//-1 (AN7223)



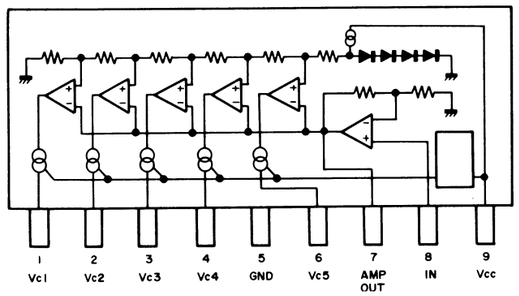


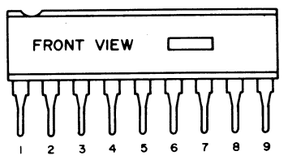
IC3: VHITA7343P/–1 (TA7343P)



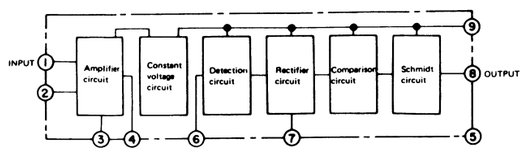


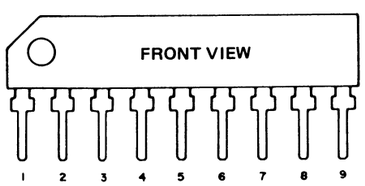
IC331 VHIBA6137//-1 (BA6137)

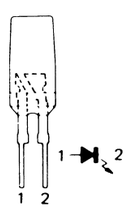




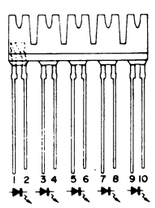
IC102: VHIIR3108A/-1 (IR3108A)







GL-9PR623
(Red)
1 : ANODE
2 : CATHODE



GL-105R54
(Red)
1, 3, 5, 7, 9 : ANODE
2, 4, 6, 8, 10 : CATHODE

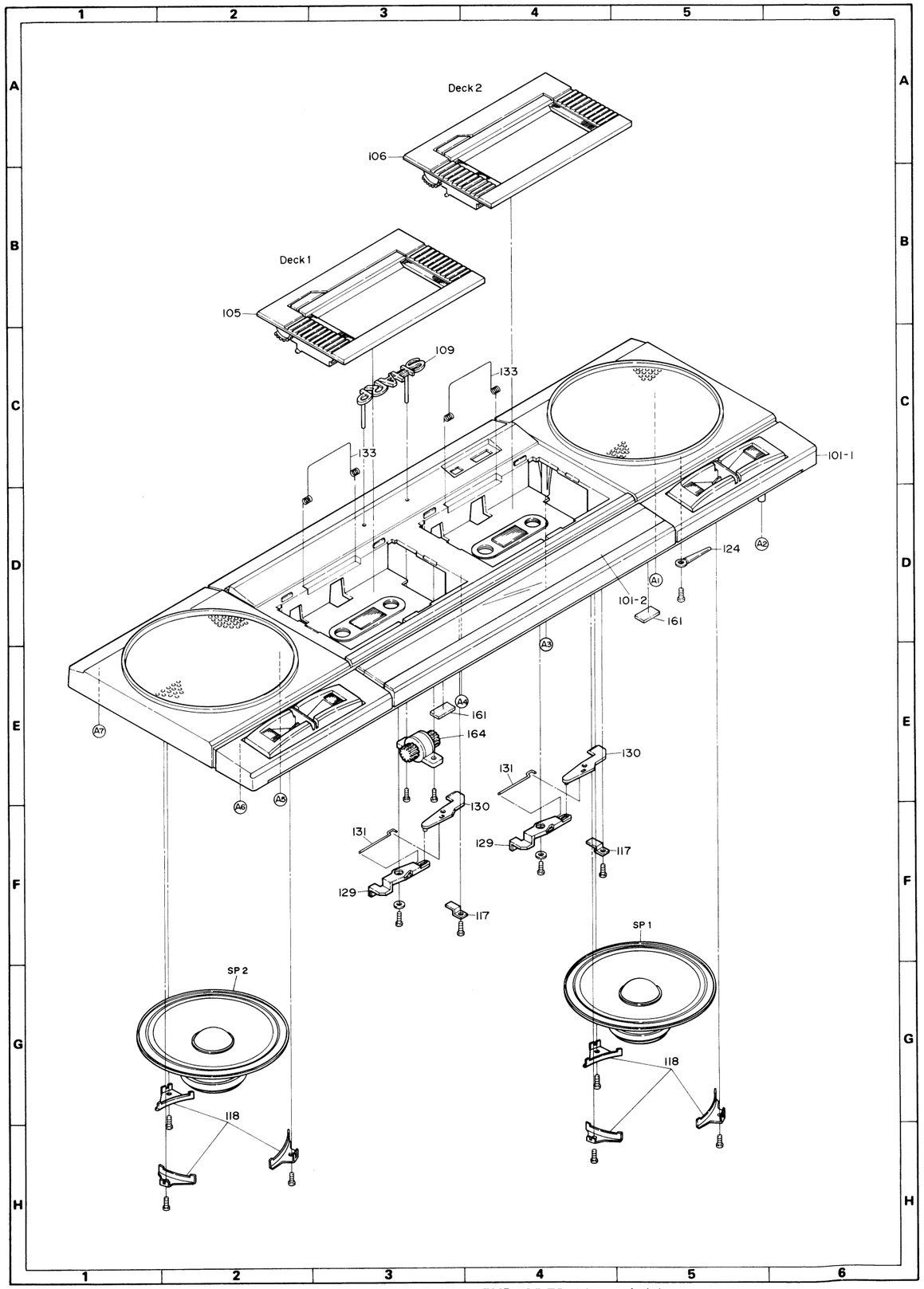


Figure 12 CABINET EXPLODED VIEW (1/2)

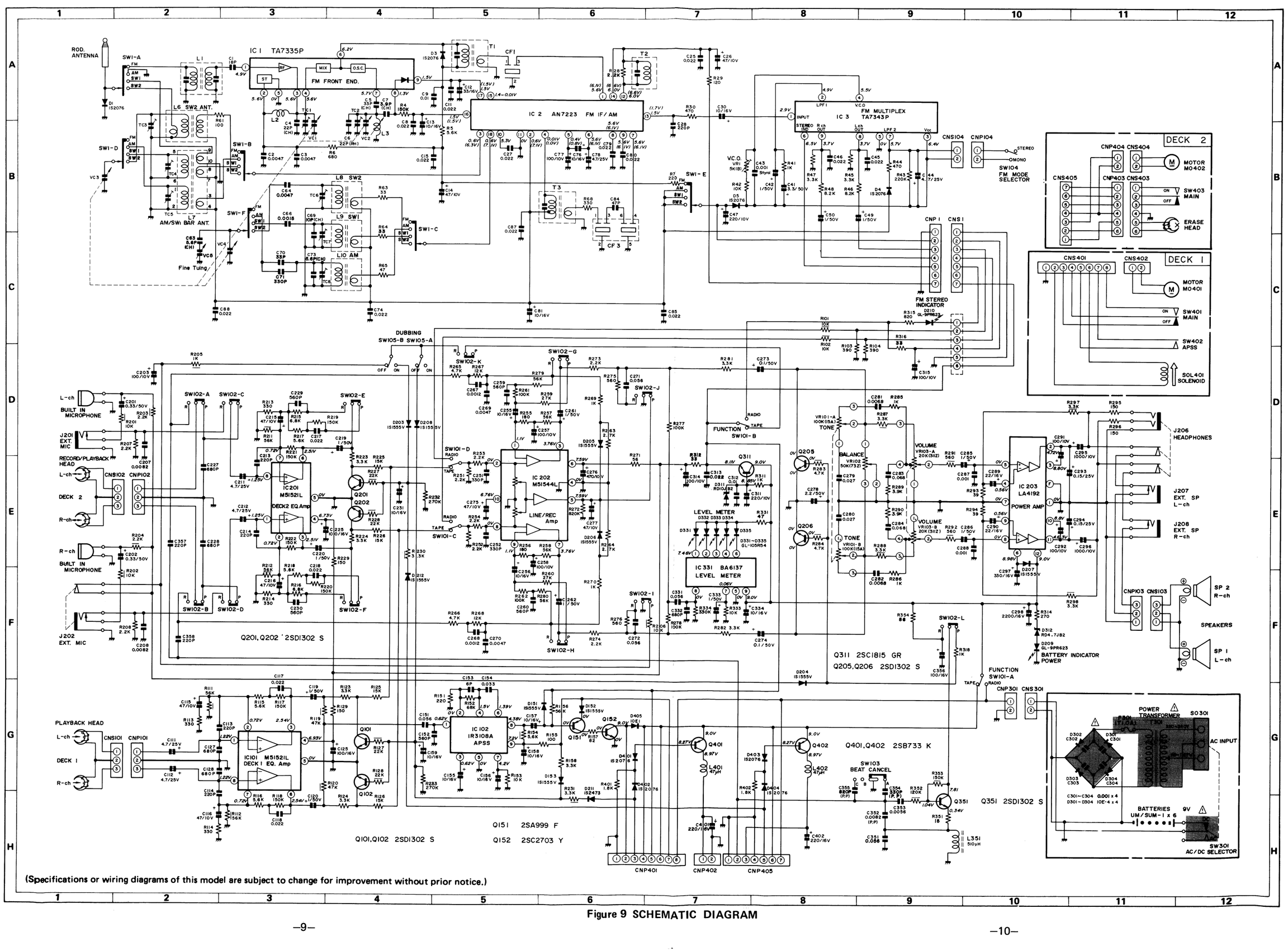


Figure 9 SCHEMATIC DIAGRAM

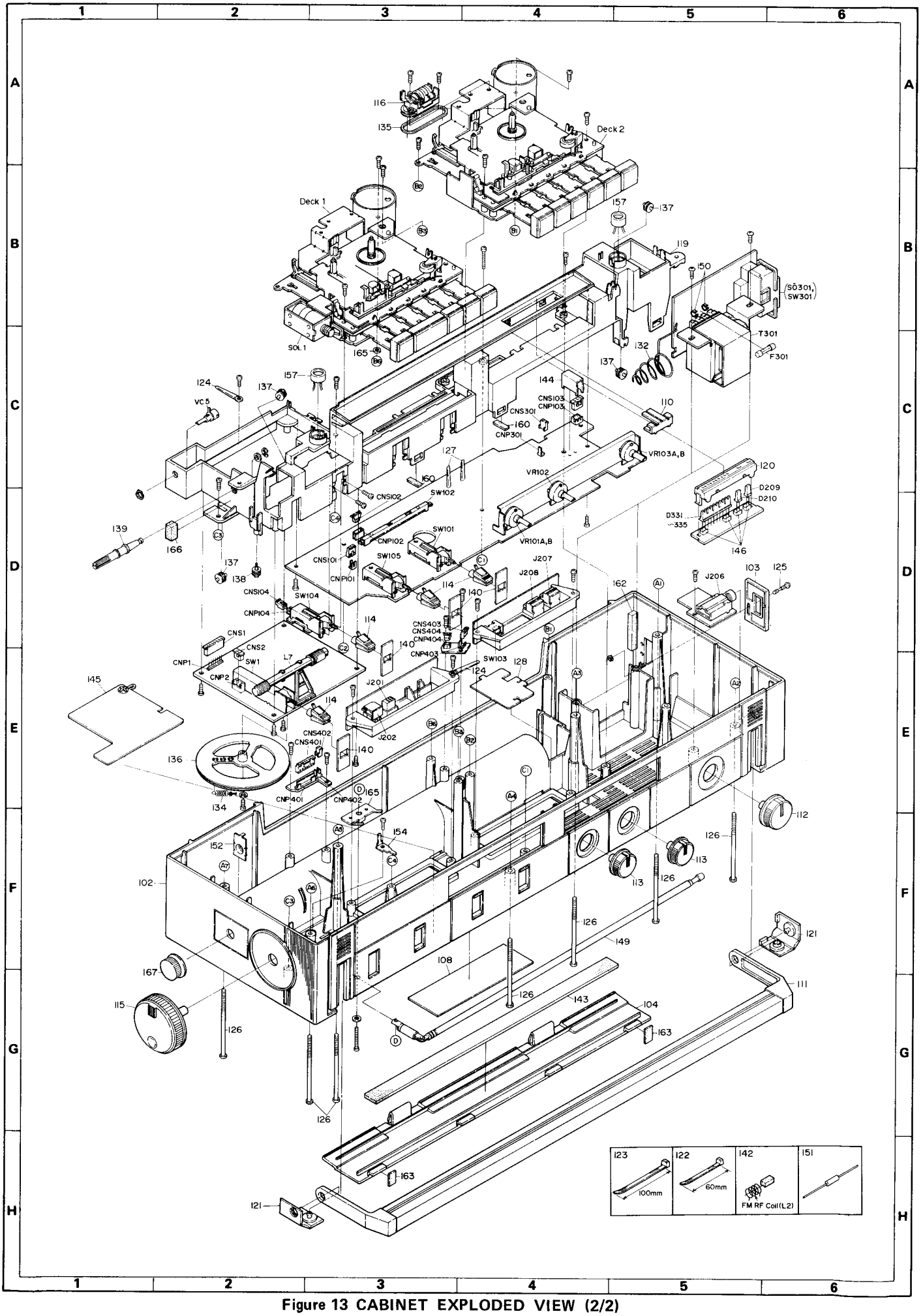


Figure 13 CABINET EXPLODED VIEW (2/2)

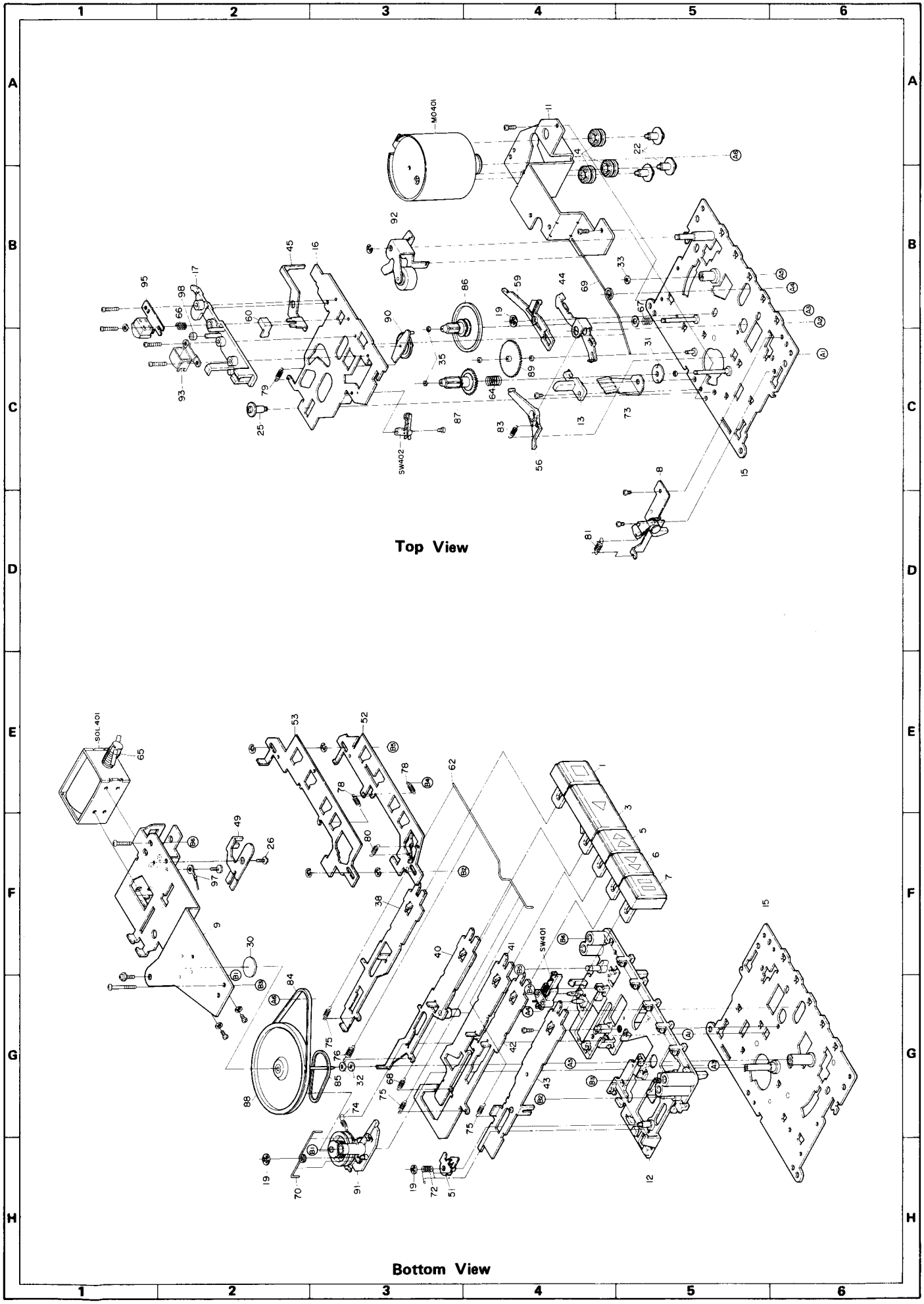


Figure 14 DECK 1 MECHANISM EXPLODED VIEW

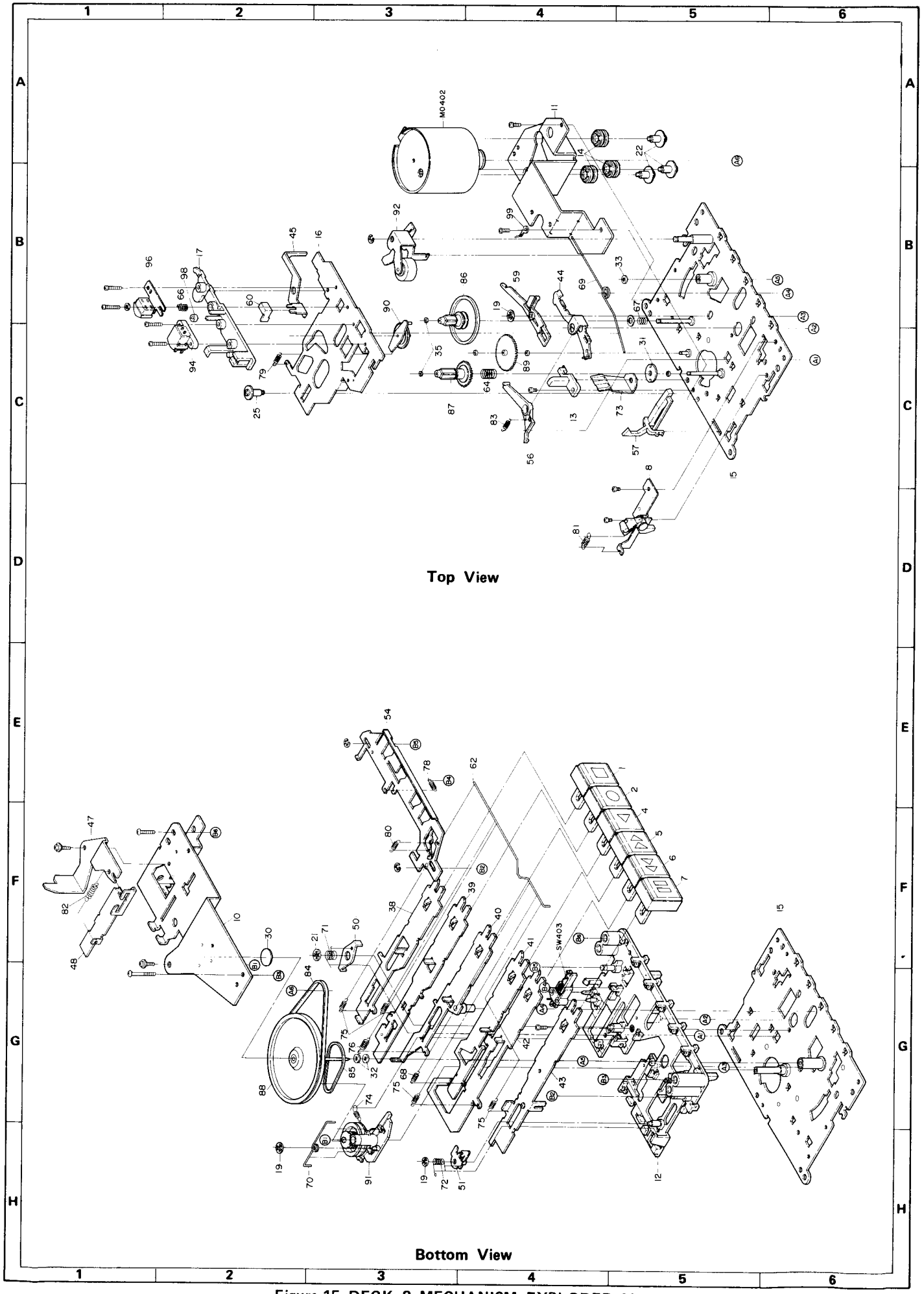


Figure 15 DECK 2 MECHANISM EXPLODED VIEW

REPLACEMENT PARTS LIST

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following information.

1. MODEL NUMBER 2. REF. NO.
3. PART NO. 4. DESCRIPTION

NOTES:
Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

REF.NO.	PART NO.	DESCRIPTION	CODE
	INTEGRATED CIRCUITS		
IC1	VHITA7335P/-1	FM Front End (TA7335P)	AG
IC2	VHIAN7223//-1	FM IF/AM Mixer Oscillator (AN7223)	AK
IC3	VHITA7343P/-1	FM Multiplex (TA7343P)	AG
IC101	RH-IX1079AFZZ	Equalizer Amp., Deck 1 (M51521L)	AG
IC102	VHIIR3108A/-1	APSS Circuit (IR3108A)	AG
IC201	RH-IX1079AFZZ	Equalizer Amp., Deck 2 (M51521L)	AG
IC202	VHIM51544L/-1	Line/Record Amp. (M51544L)	AG
IC203	VHILA4192//-1	Power Amp. (LA4192)	AK
IC331	VHIBA6137//-1	Level Meter Circuit (BA6137)	AG
	TRANSISTORS		
Q101,102	VS2SD1302TAS1	Deck 1 Muting/Tape Selector (2SD1302 S)	AC
Q151	VS2SA999-F/-1	Solenoid Drive (2SA999 F)	AC
Q152	VS2SC2703-Y-1	Solenoid Drive (2SC2703 Y)	AC
Q201,202	VS2SD1302TAS1	Deck 2 Muting/Tape Selector (2SD1302 S)	AC
Q205,206	VS2SD1302TAS1	Muting, Built-in Microphone Mode (2SD1302 S)	AC
Q311	VS2SC1815GR-1	Constant Voltage Regulated (2SC1815 GR)	AB
Q351	VS2SD1302TAS1	Bias Oscillator (2SC1302 S)	AC
Q401	VS2SB733-K/-A	Deck 1 Motor Drive (2SB733 K)	AD
Q402	VS2SB733-K/-A	Deck 2 Motor Drive (2SB733 K)	AD
	DIODES		
D1	VHD1S2076//-U	Static Protector (1S2076)	AB
D3	VHD1S2076//-U	FM Overload (1S2076)	AB
D4,5	VHD1S2076//-U	Reverse Current Prevention (1S2076)	AB
D151	VHD1S1555V/1G	Reverse Current Prevention (1S1555V)	AB
D152	VHD1S1555V/1G	APSS Malfunction Prevention (1S1555V)	AB
D153,203, D204	VHD1S1555V/1G	Reverse Current Prevention (1S1555V)	AB
D205,206	VHD1S1555V/1G	Automatic Record Level Control (1S1555V)	AB
D207	VHD1S1555V/1G	Power Amp. Circuit (1S1555V)	AB
D208	VHD1S1555V/1G	Reverse Current Prevention (1S1555V)	AB
D209	RH-PX1018AFZZ	Battery Indicator (Red) (GL-9PR623)	AC
D210	RH-PX1018AFZZ	FM Stereo Indicator (Red) (GL-9PR623)	AC
D211	VHD1S2473//-U	Reverse Current Prevention (1S2473)	AB
D212	VHD1S1555V/1G	Reverse Current Prevention (1S1555V)	AB
⚠ D301,302, D303,304	VHD10E-4FD/-1	Power Rectifier (10E-4)	AB
D311	VHERD100JB2-1	Zener, 9.7V (RD10JB2)	AB
D312	VHERD4R7JB2-1	Zener, 4.7V (RD4.7JB2)	AB
D331,332, D333,334, D335	VHPGL105R54-1	Level Indicator (GL-105R54)	AH
D401,402, D403,404	VHD1S2076//-U	Reverse Current Prevention (1S2076)	AB
D405	VHD10E1////-1	Surge Current Absorber (10E1)	AC
	FILTERS		
CF1	RFILF0080AFZZ	FM IF 10.7MHz	AD
CF3	RFILA0085AFZZ	AM IF 455 kHz	AE
	TRANSFORMERS		
T1	RCILI0157AFZZ	FM IF	AC
T2	RCILI0312AFZZ	FM Detector	AC
T3	RCILI0310AFZZ	AM IF	AC
⚠ T301	RTRNP0912AFZZ	Power Transformer	AR
	COILS		
L1	RCILA0455AFZZ	FM Band Pass Filter	AC
L2	RCILR0364AFZZ	FM RF	AA
L3	RCILB0628AFZZ	FM Oscillator	AC
L6	RCILA0556AFZZ	SW_2 Antenna	AC
L7	RCILA0602AFZZ	AM/SW_1 Bar Antenna	AM
L8	RCILB0625AFZZ	SW_2 Oscillator	AC
L9	RCILB0624AFZZ	SW_1 Oscillator	AC
L10	RCILB0623AFZZ	AM Oscillator	AC
L351	RCILF0072AFZZ	510μH, Bias Oscillator	AC
L401,402	VP-CH470K0000	47μH, Choke	AB
	CONTROLS		
VC1,2, VC3,4, TC1,2, TC4,7	RVC-R0083AFZZ	Variable Capacitors Tuning with Trimmers: TC1; FM RF Trimmers TC2; FM Oscillation Trimmers	AN

REF.NO.	PART NO.	DESCRIPTION	CODE
		TC4; SW_1 Oscillation Trimmers	
		TC7; SW_1 Antenna Trimmers	
VC5	RVC-Z0056AFZZ	Fine Tuning	
TC3	RTO-H1072AFZZ	SW_2 Antenna Trimmer	AC
TC5	RTO-H1072AFZZ	AM Antenna Trimmer	AC
TC6	RTO-H1072AFZZ	SW_2 Oscillator Trimmer	AC
TC8	RTO-H1072AFZZ	AM Oscillator Trimmer	AC
VR1	RVR-M0343AFZZ	5K ohm(B), V.C.O. Adjust.	AB
VR101A,B	RVR-Z0142AFZZ	100K ohm(15A), Tone Control	AM
VR102			
VR103A,B		50K ohm(73Z), Balance Control	
		20K ohm(311Z), Volume Control	

ELECTROLYTIC CAPACITORS

(All electrolytic capacitors are ±20% type.)

C12	RC-EZA336AF1C	33MFD, 16V	AB
C13	RC-EZA106AF1C	10MFD, 16V	AB
C14,26	RC-EZA476AF1A	47MFD, 10V	AB
C30	RC-EZA106AF1C	10MFD, 16V	AB
C41	RC-EZA335AF1H	3.3MFD, 50V	AB
C42	RC-EZA105AF1H	1MFD, 50V	AB
C44	RC-EZA475AF1E	4.7MFD, 25V	AB
C47	RC-EZA227AF1A	220MFD, 10V	AB
C49,50	RC-EZA105AF1H	1MFD, 50V	AB
C76	RC-EZA106AF1C	10MFD, 16V	AB
C77	RC-EZA107AF1A	100MFD, 10V	AB
C78	RC-EZA475AF1E	4.7MFD, 25V	AB
C81	RC-EZA106AF1C	10MFD, 16V	AB
C111,112	VCEALA1EW475M	4.7MFD, 25V	AB
C115,116	RC-EZA476AF1A	47MFD, 10V	AB
C119	RC-EZV105AF1H	1MFD, 50V	AB
C120	RC-EZA105AF1H	1MFD, 50V	AB
C125	RC-EZA107AF1C	100MFD, 16V	AB
C155,156, C157,158, C159	RC-EZA106AF1C	10MFD, 16V	AB
C201,202	RC-EZA334AF1H	0.33MFD, 50V	AB
C203	RC-EZA107AF1A	100MFD, 10V	AB
C211,212	VCEALA1EW475M	4.7MFD, 25V	AB
C215	RC-EZV476AF1A	47MFD, 10V	AB
C216	RC-EZA476AF1A	47MFD, 10V	AB
C219,220	RC-EZA105AF1H	1MFD, 50V	AB
C225	RC-EZA107AF1C	100MFD, 16V	AB
C231,255, C256	RC-EZA106AF1C	10MFD, 16V	AB
C257,258	RC-EZY107AF1A	100MFD, 10V	AB
C261,262	RC-EZA105AF1H	1MFD, 50V	AB
C273,274	RC-EZA104AF1H	0.1MFD, 50V	AA
C275	RC-EZA476AF1A	47MFD, 10V	AB
C276	RC-EZV477AF1A	470MFD, 10V	AC
C277	RC-EZA476AF1A	47MFD, 10V	AB
C278	RC-EZA225AF1H	2.2MFD, 50V	AB
C285,286	RC-EZA105AF1H	1MFD, 50V	AB
C289,290	RC-EZA226AF1C	22MFD, 16V	AG
C291,292	RC-EZA107AF1A	100MFD, 10V	AB
C293,294	RC-AZ1001AFZZ	0.15MFD, 25V	AC
C295,296	RC-EZV108AF1A	1000MFD, 10V	AD
C297	RC-EZV337AF1C	330MFD, 16V	AC
C298	RC-EZW228AF1C	2200MFD, 16V	AE
C311	RC-EZA227AF1A	220MFD, 10V	AB
C314	RC-EZA107AF1A	100MFD, 10V	AB
C315	RC-EZY107AF1A	100MFD, 10V	AB
C333	RC-EZA105AF1H	1MFD, 50V	AB
C334	RC-EZA106AF1C	10MFD, 16V	AB
C356	RC-EZA107AF1C	100MFD, 16V	AB
C401,402	RC-EZA227AF1C	220MFD, 16V	AB

REF.NO.	PART NO.	DESCRIPTION	CODE

CAPACITORS

(Tubular-shaped type chip capacitor is identified by the symbol MF of the part No. VC..MF....; this MF does not means the lead wire.)

C1	VCCSMF1HL180J	18PF, 50V, ±5%, Ceramic	AA
C2,3	VCTYMF1HV472K	0.0047MFD, 50V, ±10%, Semiconductor	AA
C4	VCCCMF1HH220J	22PF (CH), 50V, ±5%, Ceramic	AA
C5	VCCCMF1HH330J	33PF (CH), 50V, ±5%, Ceramic	AA
C6	VCCRMF1HH220J	22PF (RH), 50V, ±5%, Ceramic	AA
C7	VCCCMF1HH3R9C	3.9PF (CH), 50V, ±0.25PF, Ceramic	AA
C8	VCTYMF1CY223N	0.022MFD, 16V, ±30%, Semiconductor	AA
C9	VCTYMF1EX103N	0.01MFD, 25V, ±30%, Semiconductor	AA
C11,15, C25,27	VCTYMF1CY223N	0.022MFD, 16V, ±30%, Semiconductor	AA
C28	VCKYMF1HB221K	220PF, 50V, ±10%, Ceramic	AA
C43	VCQSMA1HL102J	0.001MFD, 50V, ±5%, Styrol	AB
C45,46	VCTYMF1CY223N	0.022MFD, 16V, ±30%, Semiconductor	AA
C63	VCCCMF1HH5R6D	5.6PF (CH), 50V, ±0.5PF Ceramic	AA
C64	VCTYMF1HV472K	0.0047MFD, 50V, ±10%, Semiconductor	AA
C66	VCTYMF1HV152K	0.0015MFD, 50V, ±10%, Semiconductor	AA
C69	VCCCMF1HH100J	10PF (CH), 50V, ±5%, Ceramic	AA
C70	VCCSMF1HL330J	33PF, 50V, ±5%, Ceramic	AA
C71	VCKYMF1HB331J	330PF, 50V, ±5%, Ceramic	AA
C73	VCCCMF1HH5R6D	5.6PF (CH), 50V, ±0.5PF, Ceramic	AA
C74,79 C80	VCTYMF1CY223N	0.022MFD, 16V, ±30%, Semiconductor	AA
C84	VCCSMF1HL470J	47PF, 50V, ±5%, Ceramic	AA
C85,87,88	VCTYMF1CY223N	0.022MFD, 16V, ±30%, Semiconductor	AA
C113,114	VCKYAT1HB221K	220PF, 50V, ±10%, Ceramic	AA
C117,118	VCTYPA1EX223K	0.022MFD, 25V, ±10%, Semiconductor	AA
C127	VCKYPV1HB681K	680PF, 50V, ±10%, Ceramic	AA
C128	VCKYAT1HB681K	680PF, 50V, ±10%, Ceramic	AA
C151	VCTYPA1EX563K	0.056MFD, 25V, ±10%, Semiconductor	AA
C152	VCKYAT1HB561K	560PF, 50V, ±10%, Ceramic	AA
C153	VCCSPA1HL6R0D	6PF, 50V, ±0.5PF, Ceramic	AA
C154	VCTYPA1EX333K	0.033MFD, 25V, ±10%, Semiconductor	AA
C207,208	VCTYAT1EX822K	0.0082MFD, 25V, ±10%, Semiconductor	AA
C213,214	VCKYAT1HB221K	220PF, 50V, ±10%, Ceramic	AA
C217,218	VCTYPA1EX223K	0.022MFD, 25V, ±10%, Semiconductor	AA
C227,228	VCKYAT1HB681K	680PF, 50V, ±10%, Ceramic	AA

REF.NO.	PART NO.	DESCRIPTION	CODE
C229,230	VCKYAT1HB561K	560PF, 50V, ±10%, Ceramic	AA
C251,252	VCKYAT1HB331K	330PF, 50V, ±10%, Ceramic	AA
C259,260	VCKYAT1HB561K	560PF, 50V, ±10%, Ceramic	AA
C267,268	VCKYAT1HB122K	0.0012MFD, 50V, ±10%, Ceramic	AA
C269,270	VCTYAT1HV472K	0.0047MFD, 50V, ±10%, Semiconductor	AA
C271	VCTYPV1EX563K	0.056MFD, 25V, ±10%, Semiconductor	AB
C272	VCTYPA1EX563K	0.056MFD, 25V, ±10%, Semiconductor	AB
C279,280	VCTYPA1EX273K	0.027MFD, 25V, ±10%, Semiconductor	AA
C281,282	VCTYAT1EX682K	0.0068MFD, 25V, ±10%, Semiconductor	AA
C283,284	VCTYPA1EX683K	0.068MFD, 25V, ±10%, Semiconductor	AA
C287,288	VCTYPA1EX102K	0.001MFD, 25V, ±10%, Semiconductor	AA
⚠ C301,302, C303,304	VCKZPV1HF102Z	0.001MFD, 50V, +80−20%, Ceramic	AC
C312	VCTYAT1EX103K	0.01MFD, 25V, ±10%, Semiconductor	AA
C313	VCTYAT1CY223N	0.022MFD, 16V, ±10%, Semiconductor	AA
C331	VCTYPA1EX563K	0.056MFD, 25V, ±10%, Semiconductor	AA
C332	VCKYAT1HB681K	680PF, 50V, ±10%, Ceramic	AA
C351	VCTYPA1EX563K	0.056MFD, 25V, ±10%, Semiconductor	AA
C352	VCQPKA2AA822J	0.0082MFD, 100V, ±5%, Polypropylene	AB
C353	VCTYPA1EX562K	0.0056MFD, 25V, ±10%, Semiconductor	AA
C354	VCQPKA2AA331J	330PF, 100V, ±5%, Polypropylene	AA
C355	VCQPKA2AA821J	820PF, 100V, ±5%, Polypropylene	AB
C357,358	VCKYAT1HB221K	220PF, 50V, ±10%, Ceramic	AA

RESISTORS

The symbol MF of the part number like VRD-MF....shows a tubular-shaped type chip resistor (1/4W, ±5%) but not a lead wire: do not take them for each other. The other resistors, unless otherwise specified, are all of carbon type (1/4W, ±5%)

R4	VRD-MF2EE154J	150K ohm	AA
R5	VRD-MF2EE562J	5.6K ohm	AA
R6	VRD-MF2EE681J	680 ohm	AA
R7	VRD-MF2EE221J	220 ohm	AA
R28	VRD-MF2EE222J	2.2K ohm	AA
R29	VRD-RG2EE121J	120 ohm	AA
R30	VRD-MF2EE471J	470 ohm	AA
R41	VRD-MF2EE102J	1K ohm	AA
R42	VRD-MF2EE103J	10K ohm	AA
R43	VRD-MF2EE224J	220K ohm	AA
R44	VRD-MF2EE471J	470 ohm	AA
R45	VRD-MF2EE332J	3.3K ohm	AA
R46	VRD-MF2EE822J	8.2K ohm	AA
R47	VRD-MF2EE332J	3.3K ohm	AA
R48	VRD-MF2EE822J	8.2K ohm	AA
R61	VRD-MF2EE101J	100 ohm	AA
R63	VRD-MF2EE330J	33 ohm	AA
R63,64	VRD-MF2EE470J	47 ohm	AA
65	VRD-MF2EE331J	330 ohm	AA
R103,104	VRD-ST2EE391J	390 ohm	AA
R113,114	VRD-ST2EE331J	330 ohm	AA
R115,116	VRD-ST2EE562J	5.6K ohm	AA
R117,118	VRD-ST2EE154J	150K ohm	AA
R123,124	VRD-ST2EE332J	3.3K ohm	AA
R125,126	VRD-ST2EE153J	15K ohm	AA
R129	VRD-ST2EE151J	150 ohm	AA
R151	VRD-ST2EE221J	220 ohm	AA
R152	VRD-ST2EE683J	68K ohm	AA
R153	VRD-ST2EE103J	10K ohm	AA
R155	VRD-ST2EE101J	100 ohm	AA
R156	VRD-ST2EE563J	56K ohm	AA
R157	VRD-ST2EE820J	82 ohm	AA
R158	VRD-ST2EE332J	3.3K ohm	AA
R207,208	VRD-ST2EE222J	2.2K ohm	AA
R213,214	VRD-ST2EE331J	330 ohm	AA
R215,216	VRD-ST2EE682J	6.8K ohm	AA
R217,218	VRD-ST2EE562J	5.6K ohm	AA
R219,220, R221,222	VRD-ST2EE154J	150K ohm	AA
R223,224	VRD-ST2EE332J	3.3K ohm	AA
R225,226	VRD-ST2EE153J	15K ohm	AA
R229	VRD-ST2EE151J	150 ohm	AA
R232,233	VRD-ST2EE274J	270K ohm	
R251,252, R253,254	VRD-ST2EE222J	2.2K ohm	AA
R255,256	VRD-ST2EE181J	180 ohm	AA
R257,258	VRD-ST2EE563J	56K ohm	AA
R259,260	VRD-ST2EE273J	27K ohm	AA
R261,262	VRD-RZ2EE104J	100K ohm	AA
R263,264	VRD-ST2EE272J	2.7K ohm	AA
R265,266	VRD-ST2EE472J	4.7K ohm	AA
R267,268	VRD-ST2EE123J	12K ohm	AA
R269,270	VRD-ST2EE102J	1K ohm	AA
R271	VRD-ST2EE560J	56 ohm	AA
R272	VRD-ST2EE824J	820K ohm	AA
R273,274	VRD-ST2EE222J	2.2K ohm	AA
R275,276	VRD-ST2EE561J	560 ohm	AA
R277,278	VRD-ST2EE104J	100K ohm	AA
R279,280	VRD-ST2EE563J	56K ohm	AA
R281,282	VRD-ST2EE332J	3.3K ohm	AA
R285,286	VRD-ST2EE102J	1K ohm	AA
R289,290	VRD-ST2EE392J	3.9K ohm	AA
R293,294	VRD-ST2EE390J	39 ohm	AA
R295,296	VRD-ST2EE151J	150 ohm	AA
R311	VRD-ST2EE102J	1K ohm	AA
R312	VRD-ST2EE330J	33 ohm	AA
R314	VRD-ST2EE271J	270 ohm	AA
R315	VRD-ST2EE821J	820 ohm	AA
R316	VRD-ST2EE330J	33 ohm	AA
R318	VRD-ST2EE102J	1K ohm	AA
R331	VRD-ST2EE470J	47 ohm	AA
R333	VRD-ST2EE103J	10K ohm	AA
R334	VRD-ST2EE334J	330K ohm	AA
R351	VRD-ST2EE150J	15 ohm	AA
R354	VRD-ST2EE560J	56 ohm	AA
R401,402	VRD-ST2EE182J	1.8K ohm	AA
	VRD-MF2EE000C	0 ohm (Jumper)	AA

OTHER CIRCUITRY PARTS

CNP1	QCNCM0705SGZZ	Plug, 7pin	AC
CNP2	QCNCM462BAFZZ	Plug, 2pin	
CNP101	QCNCM399CAFZZ	Plug, 3pin	AB
CNP102	QCNCM584CAFZZ	Plug, 3pin	AA
CNP103	QCNCM463CAFZZ	Plug, 3pin	AA
CNP104	QCNCM417BAFZZ	Plug, 2pin	AB
CNP301	QCNCM095BAFZZ	Plug, 2pin	AB
CNP401	QCNCM404HAFZZ	Plug, 8pin	AC
CNP402	QCNCM398BAFZZ	Plug, 2pin	AB
CNP403	QCNCM402FAFZZ	Plug, 6pin	AC
CNP404	QCNCM583BAFZZ	Plug, 2pin	AA
CNP405	QCNCM467GAFZZ	Plug, 7pin	

REF.NO.	PART NO.	DESCRIPTION	CODE
CNS1	CCNCW489AF09	Socket, 7pin with Wire Leads	AC
CNS2	CCNCW3348AF03	Socket, 2pin with Wire Leads	
CNS101	QCNW-1685AFZZ	Socket, 3pin with Wire Leads	AG
CNS102	QCNW-1688AFZZ	Socket, 3pin with Wire Leads	AF
CNS103	QCNW-1673AFZZ	Socket, 3pin with Wire Leads	AH
CNS104	CCNCW304BAF01	Socket, 2pin with Wire Leads	AK
CNS301	QCNW-1670AFZZ	Socket, 2pin with Wire Leads	AF
CNS401	QCNW-1687AFZZ	Socket, 8pin with Wire Leads	AC
CNS402	QCNW-1686AFZZ	Socket, 2pin with Wire Leads	AE
CNS403	QCNW-1689AFZZ	Socket, 6pin with Wire Leads	AH
CNS404	QCNW-1690AFZZ	Socket, 2pin with Wire Leads	AE
CNS405	QCNW-1772AFZZ	Socket, 7pin with Wire Leads	
B201A,B	QCNW-1768AFZZ	5Pin Board in Plug×2 Assembly	
B202A,B	QCNW-1769AFZZ	5Pin Board in Plug×2 Assembly	
B203	CCNCW487DAF06	4Pin Board in Plug. with Wire Leads Built-in Microphone	
B204A,B	CCNCW490GAF06	7Pin Board in Plug×2 Assembly	
B301A,B	QCNW-1770AFZZ	2Pin Board in Plug×2 Assembly	
B302A,B	QCNW-1771AFZZ	9Pin Board in Plug×2 Assembly	
B401A,B	CCNCW491HAF09	8Pin Board in Plug×2 Assembly	
	QCNW-1773AFZZ	Antenna Tip, with Wire Lead	
⚠ F301	QFS-C102EAFNI	Fuse, T1.0A/250V	AD
J201,202	QJAKZ0152AFZZ	Sockets, External Microphone	AG
J206	QJAKJ0106AFZZ	Socket, Headphones	AF
J207,208	QJAKZ0154AFZZ	Sockets, External Speaker	AG
MO401,402	RMOTV0126AF01	Motor, with Motor Pulley	AU
SOL401	RPLU-0151AFZZ	Solenoid	AL
⚠ SO301, SW301	QSOCE0595AFZZ	Socket, AC/DC Power Supply(With AC/DC Selector Switch)	AG
SW1-A F	QSW-B0152AFZZ	Switch, Band Selector	AM
SW101-A~D	QSW-B0163AFZZ	Switch, Function Selector	AF
SW102-A~L	QSW-S0380AFZZ	Switch, Record/Playback	AG
SW103-A~C	QSW-S0267AFZZ	Switch, Beat Cancel	AD
SW104	QSW-B0164AFZZ	Switch, FM Mode Selector	AE
SW105-A,B	QSW-B0164AFZZ	Switch, Dubbing	AE
SW401	QSW-F0136AFZZ	Switch, Deck 1 Main	AD
SW402	QSW-F0170AFZZ	Switch, APSS	AC
SW403	QSW-F0136AFZZ	Switch, Deck 2 Main	AD
SP1,2	VSP0010PB60PA	Speakers	AP

MECHANICAL PARTS

1	JKNBR0438AFSA	Key, Stop/Eject	AC
2	JKNBR0439AFSA	Deck 2 Key, Record	AC
3	JKNBM0473AFSA	Deck 1 Key, Playback	AC
4	JKNBR0440AFSA	Deck 2 Key, Playback	AC
5	JKNBR0441AFSA	Key, Rewind	AC
6	JKNBR0442AFSA	Key, Fast-Forward	AC
7	JKNBR0443AFSA	Key, Pause	AC
8	LANGF0692AFFW	Lever Assembly, Cassette Holder Lock	AD
9	LANGF0693AFFW	Deck 1 Bracket, Flywheel	AE
10	LANGF0747AFFW	Deck 2 Bracket, Flywheel	AF
11	LANGF0741AFFW	Bracket, Motor	AD
12	LANGG0092AFZZ	Guide, Operation Lever	AF
13	LANGK0293AFZZ	Cassette Base	AA
14	LBSHZ0072AFZZ	Cushion, Motor	AB
15	LCHSM0402AFZZ	Main Chassis	
16	LCHSS0173AFFW	Sub-chassis	
17	LDAIH0059AFZZ	Head Base	AB
19	LSTWC2001AFZZ	Stop Ring, 2mm Dia.	AA
21	LSTWC3002AFZZ	Deck 2 Stop Ring, 3mm Dia.	AA
22	LX-BZ0351AFFD	Screw, Motor Retaining	AA
25	LX-HZ0100AFZZ	Screw, Sub-chassis Retaining	AA
26	LX-HZ0101AFZZ	Screw, Lever Retaining	AA
30	LX-WZ1059AFZZ	Pad, Thrust	AA
31	LX-WZ1061AFZZ	Washer, Back Tension	AA
32	LX-WZ5018AGZZ	Washer, 2.1mm Dia. ×4mm Dia.×0.5mm	AA
33	LX-WZ9053AFZZ	Washer, Oil Cut	AA
35	LX-WZ9064AFZZ	Washer, 1.5mm Dia. ×3.8mm Dia.×0.5mm	AA
38	MLEVF1394AFFW	Lever, Stop/Eject	AB
39	MLEVF1395AFFW	Deck 2 Lever, Record	AC
40	MLEVF1396AFZZ	Lever, Playback	AC
41	MLEVF1397AFFW	Lever, Rewind	AB
42	MLEVF1398AFFW	Lever, Fast Forward	AB
43	MLEVF1399AFZZ	Lever, Pause	AC
44	MLEVF1309AFFW	Lever, Brake Release	AA
45	MLEVF1310AFFW	Lever, Sensor	AB
47	MLEVF1400AFFW	Deck 2 Lever, Record/ Playback Switch	AB
48	MLEVF1313AFFW	Deck 2 Lever, Record/ Playback Switch Interlocking	AB
49	MLEVF1314AFFW	Deck 1 Lever, Lock Release	AB
50	MLEVF1315AFFW	Deck 2 Lever, Record Prevention	AA
51	MLEVF1316AFFW	Lever, Pause Lock	AA
52	MLEVF1317AFZZ	Deck 1 Lever, Lock	AD
53	MLEVF1319AFFW	Deck 1 Lever, Lock	AC
54	MLEVF1324AFZZ	Deck 2 Lever, Main Lock Deck 2	AC
56	MLEVP0378AFZZ	Lever, Brake	AA
57	MLEVP0379AFZZ	Deck 2 Lever, Erase Prevention	AA
59	MLEVP0381AFZZ	Lever, Playback Release	AA
60	MLEVP0384AFZZ	Chip, Sensor	AA
62	MRODM0080AFFW	Shaft, Spring Hanging	AA
64	MSPRC0281AFFJ	Spring, Back Tension	AA
65	MSPRC0282AFFJ	Deck 1 Spring, Solenoid	AA
66	MSPRC0283AFFJ	Spring, Head Azimuth Adjust	AA
67	MSPRC0293AFFJ	Spring, Back Tension	AA
68	MSPRT0933AFFJ	Spring, Rewind Lever	AA
69	MSPRD0409AFFJ	Spring, Pinch Roller	AA
70	MSPRD0410AFFJ	Spring, Fast Forward/ Rewind Roller	AA
71	MSPRD0411AFFJ	Deck 2 Spring, Record Prevention Lever	AA
72	MSPRD0412AFFJ	Spring, Pause Lock Lever	AA
73	MSPRP0305AFFJ	Spring, Cassette Hold Down	AA
74	MSPRT0876AFFJ	Spring, Fast Forward/ Rewind Roller	AB
75	MSPRT0853AFFJ	Spring, Operation Lever	AA
76	MSPRT0854AFFJ	Spring, Playback Lever	AA
78	MSPRT0856AFFJ	Spring, Lock Lever	AA

REF.NO.	PART NO.	DESCRIPTION	CODE
79	MSPRT0857AFFJ	Spring, Playback Idler	AA
80	MSPRT0858AFFJ	Spring, Auto Stop Lever	AA
81	MSPRT0859AFFJ	Spring, Cassette Holder Lock Lever	AA
82	MSPRT0860AFFJ	Deck 2 Spring, Record/ Playback Switch Lever	AA
83	MSPRT0861AFFJ	Spring, Brake Lever	AB
84	NBLTH0090AFZZ	Belt, Flywheel Drive	AC
85	NBLTK0216AFZZ	Belt, Fast Forward/Rewind Roller Drive	AB
86	NDAIR0158AFSA	Turntable, Take-up	AE
87	NDAIR0159AFSA	Turntable, Supply	AB
88	NFLYC0099AFZZ	Flywheel	AH
89	NGERH0082AFZZ	Gear, Fast Forward	AA
90	NIDR-0078AFZZ	Idler, Playback	AD
91	NROLW0018AFZZ	Roller, Fast Forward/ Rewind	AG
92	NROLY0045AFZZ	Pinch Roller	AD
93	RHEDZ0056AFZZ	Deck 1 Head, Erase	AD
94	RHEDA0092AFZZ	Deck 2 Head, Erase	AF
95	RHEDF0077AFZZ	Deck 1 Head, Playback	AM
96	RHEDH0116AFZZ	Deck 2 Head Record/ Playback	AN
97	Not Available	Deck 1 Lug, Part of CNS401	
98	PCUSG0173AF00	Cushion	AA
99	Not Available	Deck 2 Lug, Part of CNS403	

MISCELLANEOUS

101	GCAB-1162AFSA	Front, Cabinet Assembly	AZ
⚠ 101-1	GCABA1726AFSA	Front, Cabinet	AY
101-2	HPNLD1222AFSA	Window, Dial	AG
⚠ 102	GCABB1726AFSA	Rear, Cabinet	AV
⚠ 103	GCOVH1187AFSA	Cover, AC Power Supply Socket	AB
104	GFTAB1140AFSA	Lid, Battery Compartment	AF
105	GFTAC1254AFSA	Deck 1 Cassette Compartment	AP
106	GFTAC1255AFSA	Deck 2 Cassette Compartment	AP
⚠ 108	HINDP0593AFSA	Plate, Specifications	
	HINDP0594AFSA	Plate, Specifications	
109	HBDGB1059AFSA	Badge, SHARP	AE
110	HSSND0314AFSA	Pointer	AC
111	JHNDG1088AFSA	Handle	AQ
112	JKNBK0259AFSC	Knob, Volume Control	AD
113	JKNBK0260AFSC	Knob, Tone/Balance Control	AD
114	JKNBM0479AFSA	Knob, Lever	AC
115	JKNBN0394AFSA	Knob, Tuning	AE
116	KCOUB0120AFZZ	Tape Counter	AK
117	LANGK0327AFZZ	Bracket, Lock Lever Retaining	AA
118	LANGK0282AFZZ	Bracket, Speaker Retaining	AA
119	LHLDF1282AFSA	Frame, Dial Cord Stringing	AN
120	LHLDF1283AFSA	Holder, LED	AD
121	LHLDL1057AFSA	Holder, Handle	AB
122	LHLDW1075AFZZ	Nylon Band, 60mm	AA
123	LHLDW1068AFZZ	Nylon Band, 100mm	AA
124	LHLDW9003CEZZ	Wire Holder '	AA
125	LX-BZ0322AFFF	Screw, AC Power Supply Socket Cover Retaining	AA
126	LX-CZ0011AFZZ	Screw, Cabinet Retaining	AA
127	LHLDW9014CEZZ	Wire Holder	
128	LPLTZ0065AFZZ	Plate, Battery Cover	
129	MLEVP0372AFZZ	Lever, Cassette Holder Lock	AC
130	MLEVP0373AFZZ	Lever, Cassette Holder Lock	AD
131	MSPRB0054AFFW	Spring, Cassette Holder Lock Lever	AA
132	MSPRC0340AFFJ	Spring, Battery Terminal	AC
133	MSPRD0462AFFJ	Spring, Cassette Holder Up	AB
134	MSPRT0796AFFJ	Spring, Dial Stringing	AB
135	NBLTK0234AFZZ	Belt, Tape Counter Drive	AB
136	NDRM-0159AFZZ	Drum	AC
137	NPLYB0050AFZZ	Pulley, Dial Stringing	AA
138	NPLYB0051AFZZ	Pulley, Dial Stringing	AA
139	NSFTP0058AFZZ	Shaft, Drive	AC
140	PCOVM1067AFZZ	Cover, Lever Knob	AA
142	PCUSU0128AFZZ	Cushion, FM RF Coil, FM Oscillation Coil	AA
143	PCUSU0271AFZZ	Cushion, Battery Compartment Lid	AA
144	PRDAR0284AFZZ	Heat Sink	AB
145	PSLDM7153AFZZ	Shield Plate	AC
146	PSPAS0149AFZZ	Spacer, LED	AA
149	QANTR0124AFZZ	Rod Antenna	AM
⚠ 150	QFSHD2051AFZZ	Holder, Fuse	AA
151	QJUM-0002AFZZ	Jumper, Ceramic Coating, 5.7mm	AA
152	QTANB0156AFFN	Terminal, Battery	AB
154	QTANZ0170AFZZ	Terminal, Rod Antenna	AA
157	RMICC0083AFZZ	Built-in Microphone	AF
160	PCUSF0018AF00	Felte, Frame	
161	PFLT-05514F08	Felt, Front Cabinet	
162	PGUMS0262AF00	Cushion, Rear Cabinet	
163	PFLT-0549AF08	Felt, Battery Compartment Lid	
164	MLIFP0023AFZZ	Damper, Cassette Compartment	
165	LANGQ0861AFFW	Bracket, Telescopic Rod Antenna	
166	PSPAG0106AF00	Cushion, Tuner Frame	
167	JKNBK0266AFSC	Knob, Fine Tuning	
⚠	QACCK0050AFZZ	Cord, AC Power Supply	AL
⚠	QACCL0050AFZZ	Cord, AC Power Supply	
⚠	QACCZ0051AFZZ	Cord, AC Power Supply	
⚠	QPLGA0251AFZZ	Adaptor, AC Power Supply Cord	
	RTPEK0101AFZZ	Cassette Tape	KA
	SPAKA0980AFZZ	Packing Add. Left Side	AE
	SPAKA0981AFZZ	Packing Add. Right Side	AE
	SPAKC2295AFZZ	Packing Case	
	SSAKH0024AGZZ	Bag, Operation Manual	AA
	SSAKH0087AGZZ	Polyethylene Bag Unit	AB
⚠	TCAUA0178AFZZ	Caution Label, Arabic AC Power Supply Cord	AA
⚠	TINSZ0444AFZZ	Operation Manual For EX	AE
	TLABZ0118AFZZ	Label, Free From Taxes	AE
	TMAPC0955AFZZ	Schematic Diagram	AE
	UBATU0009AGZZ	Battery	

PWB ASSEMBLY (Not Replacement Item)

DCYOT0039AF13	Tuner Circuit	–
DKEND0321AF01 (Combined Assembly)	Amp. Circuit	–

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